TWENTY-FIFTH

ANNUAL REPORT

OF THE

MEDICAL OFFICER OF HEALTH

TO THE

URBAN SANITARY AUTHORITY

OF THE

CITY OF WORCESTER.

YEAR 1898.

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The Twenty-fifth Annual Report of the Medical Officer of Health, being for the year 1898.

TO THE URBAN SANITARY AUTHORITY OF THE CITY OF WORCESTER.

Gentlemen,

I have the honour to lay before you my Report for the year 1898, giving an account of the sanitary condition of the City, and of the health of the citizens as shown in the statistics of sickness and deaths from various causes; also pointing out what steps may be taken to further improve the conditions of life so far as lies in the power of a Sanitary Authority.

The population of the City in the middle of 1898 is estimated at 44,760. This is reckoned on the basis that the increase of the population since the last census has been the same as during the ten years 1881-91. There is good reason to think that the population of Worcester has increased at a rather greater rate since 1891 than in the ten years preceding, but I have no means of verifying this, and must wait until the next census to correct the rates. The further removed from the last census the reckoning is, the greater the errors that are liable to be made.

The Birth-rate was 28·2 per 1000 living, which is 1·6 *less than* the mean rate of the preceding ten years. (Table V.) The Birth-rate for England and Wales was 29·4, which is lower than that in any other year on record, and shows a decrease of 1·1 per 1000 compared with the average of the ten years 1889-97.

The Death-rate was 17·2 per 1000 living, which is *no less than 2·5 below* the mean rate for the preceding ten years. Only, in one year, 1894, has there been a lower death-rate during the past ten years. (Table V.) The Death-rate for England and Wales was 17·6, which, compared with the average of the ten years 1888-97, shows a decrease of ·8 per 1000.

The Infantile Death-rate was 134 per 1000 births registered during the same period. This is the *lowest infantile death-rate* that has been recorded in these Annual Reports, and is 36 per 1000 less than the average of the preceding ten years. The rate for England and Wales was 161, which was 12 per 1000 above the mean proportion in the ten years 1888-97.

The Zymotic Death-rate was 1·7 per 1000, which is ·2 less than the mean-rate of the preceding ten years. The Zymotic Death-rate for England and Wales was 2·22 per 1000 living. The death-rates for the various zymotic diseases are given in the Table on Page 5.

The Death-rate from Cancer was...................... ·6
" " " Phthisis was .... 1·47
" " " All forms of Tubercle was... 2·1

The following Table, taken from the report of the Registrar-General, gives various death-rates for England and Wales; for the 33 Great Towns; and 67 other large towns among which Worcester is included.

	All causes.	Principal Zymotic Diseases (columns 3—9).	Smallpox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Fever.	Diarrhœa.	Deaths under 1 year per 1000 Births.
Columns	1	2	3	4	5	6	7	8	9	10
England and Wales ...	17·6	2·22	0·01	0·41	0·11	0·24	0·31	0·18	0·96	161
33 great towns	19·0	2·85	0·00	0·56	0·14	0·31	0·42	0·20	1·22	178
67 other large towns ...	17·2	2·41	0·05	0·41	0·10	0·28	0·27	0.21	1·09	173
England and Wales, less the 100 towns ...	16·7	1·75	0·00	0·31	0·09	0·18	0·25	0·17	0·75	145
Worcester	**17·2**	**1·70**	**0·00**	**0.42**	**0·22**	**0·64**	**0·00**	**0·02**	**0·40**	**134**

It will be seen that as compared with the "67 other large towns" Worcester has the same death-rate, and a zymotic death-rate ·7 less. The death-rates were higher in Worcester than in the 67 large towns as regards Scarlet Fever and Diphtheria, but lower as regards Whooping Cough, Fever, and Diarrhœa.

As in former years, in estimating the death-rate, there have been included the deaths of 14 inmates of Powick Asylum who went there from the City, and the deaths of persons dying in the General Infirmary who came from outside the City, 27 in number, have been excluded.

The City Coroner held inquests on 60 bodies during the year, *i.e.*, on 7·6 per cent. of the total deaths registered. Of these 13 were on Infants under one year of age, of whom 3 were illegitimate, and 9 on children between the ages of 1 and 7 years. The verdicts of the Juries were—Suicide while insane, 3; disease, aggravated by neglect by others, 2; want of attention at birth, 1; death by accident, 23; deaths from natural causes, 23; death from other known causes, 1; from causes unknown, injury, 1, found dead, 5, stillborn, 1.

Death was found to be due in one case to Anthrax, the man having become inoculated on a pimple on his neck from the skin of a Jeddah sheep which he had handled at a fellmongers' yard. This is the first instance recorded in Worcester in which a worker has been infected with Anthrax from handling *skins*, and the fellmongering trade is one of the oldest in the City. It is by no means an uncommon accident at the wharves in Bermondsey where the skins are unladen.

In my Report for the year 1893, mention was made of cases that had occurred during that year at Messrs. Webb's Horsehair Factory. By reason of the precautions and care exercised there, no further case has been known of until in March, 1898, it came out at the inquest mentioned above, that the hair from some of these Jeddah skins was sent in a bale to Messrs. Webb's factory to ascertain if it would be of any use in their manufactures. It was there handled by two or three men, and one of them contracted anthrax, from which he recovered. A sample of short hair and dust from the middle of this bale was collected by the Coroner's Officer and sent to the British Institute of Preventive Medicine, and in this dust the spores of anthrax were found and were successfully cultivated by the Bacteriologist.

In December, 1898, the Chief Inspector of Factories issued special rules, under the Factory and Workshop Acts, for the protection of all persons who have to handle in any way "any Foreign or dry East Indian hides or skins." The rules provide that the persons employed shall wear high-necked, long-sleeved over garments; shall not keep nor partake of food in any room where such skins are stored or handled; shall not work with an open cut, scratch, or sore upon any part of the body; also that proper and sufficient appliances for washing shall be provided and maintained for the use of the workmen.

These rules, if carefully adhered to, ought to greatly diminish the risk of infection in the various trades concerned.

THE INFECTIOUS DISEASES (NOTIFICATION) ACT AND THE MEANS TAKEN FOR CHECKING THE SPREAD OF INFECTIOUS DISEASES.

During the year 575 cases of Infectious Disease have been certified by the medical men of the City. As in former years, notification of these diseases by the head of the family or by the householder has been a dead letter.

The same precautions against the spread of the disease have been carried out as in former years.

No prosecution against any person for breaking the laws relating to Infectious Diseases has taken place during the year. In several instances I have reported to the Health Committee the great carelessness of parents in not calling to their aid any medical man, and allowing their children to mix with others when in an infectious state. The parents' excuse is always the same, ignorance of the nature of the illness, and as no evidence could be found to disprove this plea, a prosecution was thought to be useless. In one instance an adult had a rash on a Sunday and felt seedy, but went to work the next day and continued to work in a factory in a room where about 30 other girls were at work, for the space of more than a fortnight. Her brother was then certified with Scarlet Fever and removed to the Isolation Hospital. On inquiry it was then found that this girl was desquamating freely and without doubt had had a mild attack of Scarlet Fever. The whole circumstances of the case pointed to ignorance of the infectious nature of the illness, if illness it can be called which does not oblige any stoppage of the week's work.

Such cases emphasize the great difficulty of controlling a disease which *frequently* takes on so mild a form.

Respecting Diphtheria also similar remarks are true. Sore throats occur in children of a mild character for which no doctor is consulted and which are diphtheritic. It is not possible for the parent to know, only great care and bacteriological examination being able to decide whether the sore throat is a simple one or diphtheria. The careful mothers who keep their children at home when not in good health complain to me of the pertinacity of the School Mistresses (it is mostly in the Infant Schools) in sending after the absent child. The child has been kept at home because of a sore throat and during the morning school time, three or four messages are sent to get the child to school, and sometimes the mother's caution is broken down and against her better judgment the child is sent. This is by no means an infrequent experience, nor do I see how it is to be prevented, unless the School Managers will insist on a medical certificate before receiving back into school a child who has been reported sick by the parent.

In October a meeting of School Managers was held at the Guildhall by the suggestion of some of them and was attended by the Chairman and other members of the School Board and by the Chairman of the Health Committee (the Right Honble. the Earl Beauchamp) who presided. Many points respecting the relations between the Health Authority and the Schools were discussed and an agreement was come to on several important matters. As a result printed forms* were sent to each school department in the City advising as to the length of time a child should be kept from school who has suffered from or has been exposed to the various infectious diseases. A form (stamped and directed) has also been sent to the schools on which the names and addresses of any scholars who are suspected to be suffering from Whooping Cough or Measles may be sent to the Medical Officer of Health. The School Board also promised to have printed on the form sent to the house of the absentee (and generally taken by another scholar) a caution requesting that the bearer of the note should not be allowed to go inside the home of the sick child. It was also agreed that when a child first enters a school the parent should be asked if the child has been vaccinated and that lists of the non-vaccinated children should be kept, which shall be accessible to the officers of the Sanitary Authority from time to time.

The Health Committee approved of the result of the Conference and the scheme came into operation at the beginning of 1899. But the suggestion made in my report that a clerk should be engaged for the Health Office was not approved by the Committee, and it is certain that the Health Authority cannot carry out the work with any degree of efficiency unless a clerk is provided.

*A Copy will be found at the end of this Report.

The diseases that are scheduled under this Act have been certified during the year as follows :—

Month.	Smallpox.	Scarlet Fever.	Diphtheria.	Membranous Croup	Typhoid Fever.	Continued Fever.	Puerperal Fever.	Erysipelas.	Total.
January ...	...	10	21	...	2	...	...	2	35
February ...	...	7	23	...	3	...	1	3	37
March	...	12	45	...	3	...	...	6	66
April	...	21	25	...	...	...	...	1	47
May	...	20	27	...	...	1	...	10	58
June	...	25	11	...	1	1	...	2	40
July	...	37	9	...	1	...	...	1	48
August......	...	18	4	...	...	...	2	4	28
September .	...	42	2	...	3	...	...	3	50
October ...	...	49	4	...	1	...	...	5	59
November .	...	48	7	...	1	...	1	6	63
December .	...	28	7	...	1	...	...	8	44
Total 1898	...	**317**	**185**	...	**16**	**2**	**4**	**51**	**575**
„ 1897	...	151	167	1	20	1	7	51	398
„ 1896	4	295	317	3	18	...	5	48	690
„ 1895	1	141	26	...	17	1	3	27	216
„ 1894	63	127	34	...	46	2	6	59	337
„ 1893	13	273	39	...	65	1	9	94	494
„ 1892	1	236	27	...	67	1	6	98	436
„ 1891	...	40	10	...	73	...	6	55	184
„ 1890	...	131	10	...	77	...	7	79	304

As in former years, I have personally made inquiries at the houses from which cases of Diphtheria, Typhoid Fever, and Puerperal Fever have been certified.

Smallpox.—No case of this disease has occurred in the City during the year.

It has seemed right to the Legislature of the country during the year to amend the law respecting Vaccination. The new Act comes into force at the beginning of 1899. For some years past Vaccination has been a matter of *local option*, as many of the authorities whose duty it was to enforce the law have declined to carry out that duty. Under the new Act Vaccination will become a matter of *individual option*, as a parent can obtain exemption for the vaccination of his child if he can satisfy two Magistrates that he has a conscientious objection to having it done. The Act is to remain in force for 5 years.

It is no part of my duty to discuss the merits or demerits of the new Vaccination Act. So far as I am able to judge the "conscience clause" is not likely to be made much use of in this City. Up to March 31st, 1899, only 23 certificates to conscientious objectors have been granted. The alteration in the law respecting the duties of the Public Vaccinator will very much increase his work, and the expense to the community will be about fourfold. The Public Vaccinator performs one of the most important duties towards the State that a medical man can perform, and his work is under the periodical inspection of the Local Government Board.

In the Reports of the Medical Officer of the Local Government Board year by year, the statistics respecting Vaccination in the various districts through the country are given. The figures of especial interest are those showing the percentage of the children born who are not vaccinated at the time the statistics are made up, *i.e.*, 18 months after the year in question.

UNION OF WORCESTER.

Year	Children not finally accounted for (included cases postponed) percentage of births.
1887	6·9
1888	8·9
1889	10·3
1890	13·9
1891	23·2
1892	17·0
1893	11·7
1894	25·0
1895	15·5

Years 1883-87 average 5·6.
„ 1888-92 „ 14·6.

Thus it will be seen that a very serious increase in the percentage of unvaccinated children has occurred since 1887, and it would probably be well within the mark to estimate, that of the population under 15 years of age, from 15 to 20 per cent. are unvaccinated. Very similar figures obtain throughout the country, and this fact constitutes a considerable danger to the future welfare of the community.

It must be a great satisfaction to your Authority to know that the Isolation Hospital which has been opened this year could be made use of for the reception of Smallpox patients should an epidemic occur. It is not permissible to put Smallpox patients there in conjunction with patients suffering from other diseases, but it may be used for Smallpox only, in case the Smallpox Hospital should not afford sufficient accommodation.

Scarlet Fever.—As shown in the preceding table this disease assumed epidemic proportions during the last four months of the year, and the total number of the cases certified exceeded that of any year during which the Act has been in force.

The following figures are of interest :—

	Cases Certified.	Houses Affected.	Cases removed to Hospital.	Died in Hospital.	Died at Home.
1st Quarter ...	29	24	19	—	—
2nd Quarter...	66	50	44	1	2
3rd Quarter ...	97	65	64	2	—
4th Quarter ...	125	99	87	3	2
Total......	317	238	214	6	4

During the first quarter of the year there were localised outbreaks in the Blockhouse and in Diglis Road. In July the Red Hill district suffered especially, and on July 11th the Mixed School at Red Hill was closed until July 22nd (when the holidays began) because of a number of children attending the school being attacked. After the holidays in September many cases occurred in the Arboretum and in the new district on the East of the Bath Road. In the Autumn the North end of the City was especially effected, but the disease was widespread, as is shewn by the fact that 72 school children, all primary cases, attended no less than 28 different School Departments.

Diphtheria.—It will be seen that this disease was very prevalent during the first five months of the year, and then greatly decreased, each month of the second half of the year having comparatively few cases.

	Cases Certified.	Houses Affected.	Cases removed to Hospital.	Died in Hospital.	Died at Home.
1st Quarter......	89	54	33	5	10
2nd Quarter ...	63	56	30	4	2
3rd Quarter ...	15	13	5	—	2
4th Quarter ...	18	18	5	2	4
Total	185	141	73	11	18

It will be noted that the stress of the epidemic was during the first three months before the new Isolation Hospital was opened, and also that 15 of the 89 cases occurred in the Royal Albert Orphan Asylum and were not in need of removal to Hospital.

Early in January there was an outbreak in 3 courts in Sidbury, due to infection from a child who was not seen by any doctor until a few hours before death. From this case 8 other persons were infected and were all removed to Hospital. During February there was an outbreak in the Albert Orphan Asylum, which contained at the time 82 children. Eleven boys and three girls were certified to have diphtheria, several of the certificates being sent on the reports of bacteriological examinations. One boy died. The general sanitation of the building was found to be in a very unsatisfactory condition, and plans have been prepared for the entire reconstruction of the drainage and other alterations.

In March the children attending the Infants' and Girls' Schools of St. John's Parish became attacked, and the

Schools were closed on March 8th for 4 weeks, and this period was extended by a second order to April 18th. There were some minor defects of drainage of the School premises which the managers at once had remedied. Many complaints were made to me by the persons living in some of the streets in St. John's of the bad smells coming from the sewer ventilators. These were most frequent from Knight Street and McIntyre Road. The fall of the sewer in the latter road is, I believe, a poor one, and considerable difficulty is experienced in flushing it.

In April the disease appeared among the scholars attending St. Stephen's Infant School, and by order of the committee the school was closed from April 6th to May 9th.

After May the cases were mostly sporadic, the only schools attacked were St. Stephen's Infant and Girls' Schools, three cases occurring in each during the last three months of the year.

During the year 185 cases were certified. Of these 15 occurred at the Orphan Asylum and 5 in the General Infirmary. There remain 165.

Of the 165 cases—

132 were primary,
33 „ secondary.

Of the 132 primary cases—

19 were adults,
25 children attended no school,
86 attended school.

The 86 children attended the following schools :—

Quarter......	1st.	2nd.	3rd.	4th.	Total.	
St. John's Infant (202)*......	6	11	2	0	19	32
,, ,, Girls' (167)	8	2	0	0	10	
,, ,, Boys' (193)	1	2	0	0	3	
St. Stephen's Infant (198)...	5	7	0	3	15	22
,, ,, Girls' (225) ...	2	0	2	3	7	
St. Peter's Infant (191)......	1	3	0	0	4	10
,, ,, Girls' (338)	1	3	0	0	4	
,, ,, Boys' (357)	0	2	0	0	6	
St. Mary's Infant (128)......	1	4	0	0	5	5
						69

The remaining 17 cases were distributed, 14 among 10 different school departments (9 children in 5 infant departments) and 3 at two private schools.

As will be seen the schools of three parishes contributed 64 out of the 86 primary cases among school children ; also that 52 out of the total 86 were children attending the infant departments. The outbreak of Diphtheria in St. John's parish is a good example of the school influence in spreading the disease. The table above shows that 32 primary school cases occurred ; besides these 10 secondary cases occurred in school children ; there were 17 other primary cases, 6 in adults, and 11 in children under school age, making 59 cases in all. In the families where the first case to be certified was under school age, it was frequently found that another child who attended school had had a sore throat which was thought little of, and which had not been brought under the notice of a medical man.

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* Average attendances from Handbook of the Worcester School Board, 1898.

Now in the adjoining parish of St. Clement's, the schools were free from the infection of Diphtheria throughout the year, only one doubtful primary case at the infant school being certified. No one who knows the two parishes will contend that the surroundings of the children's homes in St. Clement's are so superior to those in St. John's as to account for the figures given above.

The experience of the last three years confirms me in the belief that the *main factor* in the spread of Diphtheria among children is their aggregation in schools ; and that the prompt closure of the school affected is the right course to pursue. Most probably the agents in spreading the disease are children with slight sore throats, unrecognised as Diphtheria, who are allowed to mix with the healthy children. When any children at a school have Diphtheria, every child with any suspicion of a sore throat should be kept away from school and not allowed to return unless with a medical certificate of freedom from infection. Unless the greatest care is taken by the teachers in this matter, the disease is almost sure to spread.

The following Table shews the ages of the persons attacked, and the deaths occurring in each period, for males and females separately, and for both together :—

	Under 1 year.	1 to 2 years.	2 to 3 years.	3 to 4 years.	4 to 5 years.	Total under 5 years.	5 to 10 years.	10 to 15 years.	15 to 20 years.	Over 20 years.	Total.
Males ...	3	2	3	9	5	22	26	20	3	5	76
Deaths ...	3	1	1	4	1	10	4	...	...	...	14
Females...	1	2	4	9	10	26	50	17	4	12	109
Deaths ...	...	1	...	2	2	5	8	1	...	1	15
Total......	4	4	7	18	15	48	76	37	7	17	185
Deaths ...	1	2	1	6	3	15	12	1	...	1	29

The Death-rate of the attacked per centum was as follows :—

Persons.			Males.			Females.		
Total.	Under 5 years.	Over 5 years.	Total.	Under 5 years.	Over 5 years.	Total.	Under 5 years.	Over 5 years.
15·6	31·2	10·2	18·4	45·4	7·4	13·7	19·2	12·0

The Death-rate of the whole number is 3·5 per cent. less than in 1897 : that of persons under 5 years is 8 per cent. less. The great discrepancy in the Death-rate under 5 of males and females is no doubt accidental and due to the smallness of the figures.

Of the 185 persons attacked, 29 died. Of these 15 occurred at the Orphan Asylum and one died ; 5 in the wards of the General Infirmary, none died ; and 3 were taken to the General Infirmary for the operation of tracheotomy and two died ; 112 were nursed at home and 18 died ; 68 were treated at the Isolation Hospital and 9 died.

The following is a Table similar to one in my Reports for the past two years :—

DEATHS ON DAYS AFTER CERTIFICATION OF THE DISEASE.

	Same day as certified.	1 day after	2 days after.	3 days after.	4 days after.	5 days after.	6 days after.	7 days after.	1 to 2 weeks after.	2 to 3 weeks after.	3 to 4 weeks after.	Over 4 weeks	Total.
At home	5	4	2	...	1	1	1	2	1	...	1	...	18
Isolation Hospital	...	2	2	...	...	...	...	1	2	...	1	1	9
General Infirmary	...	2	...	...	...	...	...	...	...	...	...	...	2

Excluding the two tracheotomy deaths it will be seen that 15 deaths out of 27 took place within two days of being first seen by a medical man, little chance being thus given of saving life.

I do not know that any fresh knowledge of the causation of the disease has been discovered during the past year.

One method of checking the spread of the disease has now had considerable trial, and can be strongly recommended. That is, the use of the antitoxin serum as a prophylactic. If one child in a family is attacked with Diphtheria, possible the others have contracted the disease before isolation was attempted, in which case these children may be protected from the dangers of the disease by injection of a small dose (300 units) of antitoxin serum. The protection afforded lasts only two to three weeks, but the disadvantages accruing from the injection are as nothing compared with the risks attending on the disease.

A child was certified by a medical man as suffering from

Diphtheria and the parents were informed by him of the fact. Nothwithstanding the parents removed the child the same day from the City into the Martley district. The father was prosecuted by the Martley District Council for exposure of the infected child and was fined.

Typhoid Fever.—During the year only 16 cases of this disease have been certified ; the lowest number since this Act came in force.

Of these 16 cases, 5 certainly contracted the disease elsewhere (two being sent to the General Infirmary from the surrounding districts), and in the cases of two others there was a probability of the disease having been caught away from Worcester. One other case certified and sent to the Infirmary proved to be not Typhoid Fever. Hence only 10 cases occurred in the City during the year, about one-seventh of the number that used to occur before the enlargement of the area of the filter beds at the Waterworks.

Only one death has been registered as due to the disease.

Continued Fever.—Two cases of illness under this heading were certified. The patients were both children, and both recovered.

Puerperal Fever.—Of this disease four cases have been certified during the year, and one death occurred. Three of the patients were attended by medical men, and one by a midwife.

In my last year's Report, I pointed out how urgent was the need for putting the midwives, both professional and amateur, under some State control, and that Bills had come before the Legislature having that object. Nothing has been done as yet, nor seems likely to be accomplished until some Government takes the matter up.

Measles, which was epidemic in the last quarter of 1897, continued to spread through the first quarter of 1898, and no less than 19 deaths resulted. In February the managers of the schools of St. Nicholas Parish, and of the girls' and infants' schools of St. Stephen's Parish, applied to the Health Committee for certificates under Section 101* of the Day School Code, that the schools might not suffer pecuniary loss owing to the numbers in attendance being seriously diminished by the incidence of the disease.

THE ISOLATION HOSPITAL.

The following Table shews the number of admissions into the Isolation Hospital for the year 1898 and for 10 years preceding :—

Year.	Smallpox.	Scarlet Fever.	Diphtheria.	Typhoid Fever.	Measles.	Total.
1888	...	41	1	10	...	52
1889	...	16	2	17	...	35
1890	...	97	...	22	...	119
1891	...	24	...	20	1	45
1892	1	107	4	9	1	122
1893	12	143	...	8	1	164
*1894	8	45	7	11	1	72
1895	...	79	6	5	...	90
1896	...	53	137	1	...	191
1897	...	82	70	1	...	153
1898	...	**214**	**73**	...	...	**287**

*In this year a separate Smallpox Hospital was established.

Table shewing the number of patients who were admitted, discharged, or died during each month of 1898.

	Scarlet Fever.			Diphtheria.		
	Admitted.	Discharged.	Died.	Admitted.	Discharged.	Died.
January	7	6	...	11	8	...
February	4	3	...	3	6	1
March	9	8	...	14	9	1
April............	17	5	...	6	6	1
May	9	10	1	16	13	1
June	13	14	...	11	10	3
July	27	11	2	6	8	...
August	11	22	...	...	3	...
September ...	31	18	...	1	...	...
October	33	17	1	...	1	...
November ...	26	30	...	2	...	...
December......	27	32	2	3	1	1
Total.........	214	176	6	73	65	8

The following is a Table shewing the number of admissions and deaths under various age-groups :—

	Under 5 years.		5 to 10 years.		10 to 15 years.		15 to 20 years.		Over 20 years.	
	Admissions	Deaths	Admissions	Deaths	Admissions	Deaths	Admissions	Deaths	Admissions	Deaths
Scarlet Fever	52	3	107	3	38	...	8	...	8	...
Diphtheria	16	5	40	3	11	...	1	...	5	...

	Scarlet Fever.	Diphtheria.
In Hospital, January 1, 1898	8	3
Admitted during year to Barbourne Hospital	22	31
To Newtown Hospital	192	42
	222	76
Discharged or died during year	182	73
Remaining in Hospital, December 31	40	3

During the year I paid 109 visits to the Barbourne Hospital and 215 to the Newtown Hospital, making a total of 324.

It will be noted that no less than 287 patients were admitted during the year; and of this number 234 were admitted into the New Hospital from the City as well as 16 patients transferred from Barbourne on April 13th and 16th, making a total of 250 treated there in 8½ months.

During the Autumn, when Scarlet Fever was very prevalent, the type of the disease was less mild than has been the case for some years past. There were more severe complications attending the disease and as a consequence the patients had to be kept in the Hospital beyond the average time. When opened, the New Hospital was not completely furnished, and it was necessary to purchase 12 more beds. This brought the accommodation up to 57 beds, which were all filled on several occasions during the height of the epidemic of Scarlet Fever. Since the beginning of June a daily record of the patients and staff has been kept and the following are the averages for each month :—

Average	number	of patients for	4	weeks ending	June 25—31
,,	,,	,,	5	,,	July 30—36
,,	,,	,,	4	,,	Aug. 27—35
,,	,,	,,	5	,,	Sept. 30—28
,,	,,	,,	4	,,	Oct. 29—44
,,	,,	,,	4	,,	Nov. 29—51
,,	,,	,,	5	,,	Dec. 31—48

The highest *weekly* average was 54 for the week ending November 12th. The lowest was 23 for the week ending September 10th.

The staff varied from 10 to 14; nursing staff, including matron, from 6 to 9; and servants 4 or 5.

I have much pleasure in recording the excellent way in in which the Matron (Mrs. Bowen) has performed her duties and the energy she has shown in organising the arrangements and work of the Hospital.

The New Hospital was opened by His Worshipful the Mayor (Alderman Buck) on April 2nd, and the patients were removed there from Barbourne on April 13th and 16th. The City is indebted to Lady Mary Lygon for a large number of pictures for the wards, all of them beautiful and of a kind to delight and instruct the growing minds of the children.

The Water Supply.—There is nothing to report on this important question beyond what I have said in former years. It should not be forgotten that the source of our drinking water is a polluted one, but one that will be less polluted year by year as the towns and villages above Worcester are made to dispose of their sewage otherwise than by passing it into the Severn. It would have been a pleasing duty to me to request that your Authority should join in bringing pressure to bear on those Authorities who pollute the river above, and so aid in the purification of our Water Supply, but that is impossible so long as we sin in the same way.

At present, only *the efficiency* of our sand filters stand between the river and the citizens' health, and I would again urge that the filtering area be increased. It is obvious that as more houses are built from year to year more water is used, and, if the filtering area is not increased, proper purification of the water cannot take place.

The Refuse of the City continues to be disposed of in the same unsatisfactory manner as in former years. In many of my Annual Reports I have pointed out the great danger to health that must follow from depositing *organic* refuse in gravel pits or on low-lying ground, and after a varying period of time allowing houses to be built on this *made soil.* The same method of utilisation of refuse is going on in many other towns through the country, and similar warnings are given by the Medical Officers of Health. In the larger towns the refuse is so great that it must be removed far away or destroyed by burning.

The scientific questions involved in the ultimate destruction of all organic refuse have only recently received the attention they deserve. It has for some years been known that organic matter is broken up by means of the action of living organisms. Thus it is not a chemical but a vital process; and the action of these small organisms causes decomposition of the organic matter into its constituent parts, and so allows the vegetable world to take hold of and make use of it for growth. Without these useful micro-organisms the most fertile country would soon become a barren waste. Some of these organisms can work without the presence of oxygen, and it is these kinds that cause putrefaction. Now it is clear that if the subsoil of cities be polluted by the deposit of organic matter, and these deposits be covered up so that air can with the greatest difficulty pass through them, that the organic mattter can only be destroyed by putrefactive processes, accompanied by the evolution of noxious gases. Houses that are built on such a foundation must draw in this foul air from below, and this causes the dwellers in them to have bad health. This deteriorated health paves the way for all kinds of disease. There is no doubt that it is strictly accurate to state that the resistance of any individual to disease depends on the state of health : it is not the absence of exposure to the disease, but the ability to resist the invasion, to destroy the enemy that would obtain a footing.

It has been the custom to order the builders who erect houses on *made soil* to put a layer of concrete under the houses. The good of this procedure depends on the kind of concrete and the integrity with which the whole surface to be built on is covered.

During the past two to three years a great proportion of the City refuse has been used for raising and levelling the East side of Pitchcroft. I have been assured by the officials concerned in this work, that only house refuse, non-offensive trade refuse, and the road sweepings are used in this way. The contents of such privies as exists, of wet ashpits, and offensive trade refuse are not deposited there. When the level of the place has been raised sufficiently, the heap is covered with 18 inches of earth and then turfed. When the work is done, there is no reason to think that the decomposition of the refuse under the earth will cause harm to anyone. But in the process of depositing and levelling, the same cannot be said. The dangers lie in the distribution of dust from the heaps which in the summer time quickly undergo decomposition, and from the flies which infest the heaps and which may carry the microbes of putrefaction into the houses, so contaminating the food and causing illness. The former danger may be obviated by the use of water, keeping the dust under control when the dry weather necessitates it. The danger from the flies contaminating the food supply in the houses by carrying putrefying organisms from the refuse heaps, is no imaginary one, and is well recognised in countries where insect life is more abundant than in England. There was last year for a time a veritable *plague* of flies in the houses adjoining the tip, the ceilings and walls of some houses were almost black with them; but after careful inquiries I could not find that any illness resulted among the inhabitants, no diarrhœa nor bowel disorders among the children more than is usual in the hot weather. Although I say this of last year (1898), I think the danger is a real one, and every measure should be taken to obviate it. If the work is to be continued the steps necessary to minimise the risks are obvious. But I would strongly recommend your Authority to consider the advisability and advantages to be gained by the erection of a Refuse destructor, which in construction and efficiency have been much improved of late years.

The Sewerage System.—Complaints have frequently been made to me, when visiting the houses where infectious disease has occurred, of the bad smells from the sewer ventilators and from the road gullies. Many of the old form of gully have become defective, and are being replaced by new gullies which cannot become untrapped.

As to the sewer ventilators, the complaints are most frequent in those streets in which the sewer has a blind end. I would suggest that in all such cases a ventilating shaft should be placed at the termination of the sewer ; and also that a *systematic* effort should be made to erect ventilating shafts in the minor streets of the City, especially in such as are narrow and closed in. The constant pollution of the air in these streets by the sewer exhalations must seriously endanger the health of the children who find in the streets their only playground.

Bakehouses.—There were 88 bakehouses in use in the City during the year, some of them only for part of the year. Several of the smaller and more unsatisfactory bakehouses are frequently changing hands. I found them kept in general good order. Some of them it is impossible to keep clean, owing to their defective structure and arrangement ; on the other hand some are always very clean. In all cases where I found a "young person" employed I informed H.M. Inspector of Factories, that he might see that the law regulating their employment is duly carried out.

Offensive Trades.—These remain as in former years. An application to establish the trade of a gut scraper was made, but the premises were quite unfit and the application was not granted. The complaints respecting the fellmongers' yards were much fewer than in the preceding year. I visited all the places on three or four occasions during the hot weather and found them kept in reasonable good order. Respecting one of the places in which "puring" is carried on, the malodours pervade the neighbourhood at times and, I believe, will continue to do so until some artificial method of extracting the foul air from the room is adopted, instead of allowing it to pass through the windows into the adjoining streets.

The Report of the Sanitary Inspector follows the Statistical Tables, and shews the great amount of work that passes through the office in the year.

I remain, Gentlemen,
Your obedient Servant,
MABYN READ.

April 8th, 1899.

CITY OF WORCESTER.

REGULATIONS RESPECTING INFECTIOUS DISEASES IN THE ELEMENTARY SCHOOLS.

Scholars who have been attacked by

Scarlet Fever to be kept from School for 8 weeks.
Diphtheria „ „ „ 8 „
Whooping Cough „ „ „ 8 „
Measles „ „ „ 4 „

N.B.—Unless in any particular instance a Medical man certifies that some shorter or longer period of Isolation is necessary.

Scholars who have been exposed to infection from

Scarlet Fever to be kept from School for 10-14 days.
Diphtheria „ „ „ 12 „
Whooping Cough „ „ „ 21 „
Measles „ „ „ 16-21 „
dating from last day of exposure.

Printed forms (stamped) are supplied on which the Masters and Mistresses may send to the Health Office the names and addresses of all scholars suspected or known to be suffering from

MEASLES OR WHOOPING COUGH.

When a child enters a School the parent should be asked if the child has been vaccinated, and a list should be carefully kept with the full name and address of every child NOT VACCINATED.

Table I.—*DEATHS REGISTERED FROM ALL CAUSES during the year 1898.*

NOTE.—The Deaths of Non-Residents occurring in Public Institutions situated in the District are excluded, and the Deaths of Residents occurring in Public Institutions situated beyond the limits of the District are included.

	AGES. 0 to 1	1 to 5	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 to 75	75 to 85	85 and upwards.	Totals.
I. SPECIFIC FEBRILE, OR ZYMOTIC DISEASES	30	33	18	1	2	7	3	8	2	4	1	109
II. PARASITIC DISEASES	...	...	...	...	...	...	...	...	...	...	...	...
III. DIETIC DISEASES	...	...	...	...	1	2	1	...	...	...	...	4
IV. CONSTITUTIONAL DISEASES	10	10	9	15	15	22	13	17	16	2	1	130
V. DEVELOPMENTAL DISEASES	33	1	...	...	...	...	...	...	18	40	15	107
VI. LOCAL DISEASES	47	28	10	4	20	26	41	70	60	29	7	342
VII. DEATHS FROM VIOLENCE	4	5	3	3	4	...	2	1	2	1	1	26
VIII. DEATHS FROM ILL-DEFINED and NOT SPECIFIED CAUSES	46	1	2	...	...	1	1	...	2	1	...	54
TOTALS	170	78	42	23	42	58	61	96	100	77	25	772
I.—Specific Febrile, or Zymotic Diseases.												
1.—MIASMATIC DISEASES.												
Smallpox... Vaccinated	...	...	...	...	...	...	...	...	...	...	...	...
Smallpox... Unvaccinated	...	...	...	...	...	...	...	...	...	...	...	...
Smallpox... No Statement	...	...	...	...	...	...	...	...	...	...	...	...
Measles	6	12	...	1	...	...	...	...	...	...	...	19
Scarlet Fever	...	5	5	...	...	...	...	...	...	...	...	10
Typhus	...	...	...	...	...	...	...	...	...	...	...	...
Whooping Cough	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria	3	14	12	...	...	...	...	...	...	...	...	29
Simple Continued and Ill-defined Fever	...	...	...	...	...	...	...	...	...	...	...	...
Enteric or Typhoid Fever	...	...	...	...	...	1	...	...	...	...	...	1
Other Miasmatic Diseases	...	...	...	...	...	...	...	...	...	...	...	...
Influenza	1	1	...	...	1	4	1	6	2	3	1	20
2.—DIARRHŒAL DISEASES.												
Simple Cholera	...	...	...	...	...	...	...	...	...	...	...	...
Diarrhœa, Dysentery	16	1	1	...	...	...	...	...	...	...	...	18
3.—MALARIAL DISEASES.												
Remittent Fever	...	...	...	...	...	...	...	...	...	...	...	...
Ague	...	...	...	...	...	...	...	...	...	...	...	...
4.—ZOOGENOUS DISEASES.												
Cowpox and effects of Vaccination	...	...	...	...	...	...	...	...	...	...	...	..
Other Diseases (*e.g.*, Hydrophobia, Glanders, Splenic Fever)	...	...	...	...	...	1	...	...	...	...	...	1
5.—VENEREAL DISEASES.												
Syphilis	4	...	...	...	...	...	...	...	...	...	...	4
Gonorrhœa, Stricture of Urethra	...	...	...	...	...	...	...	...	...	...	...	...
6.—SEPTIC DISEASES.												
Erysipelas	...	...	...	...	...	...	...	...	...	1	...	1
Pyæmia, Septicæmia	...	...	...	...	...	1	2	2	...	...	...	5
Puerperal Fever	...	...	...	...	1	...	...	...	...	...	...	1
II.—Parasitic Diseases.												
Thrush, and other Vegetable Parasitic Diseases	...	...	...	...	...	...	...	...	...	...	...	...
Worms, Hydatids, and other Animal Parasitic Diseases	...	...	...	...	...	...	...	...	...	...	...	...
III.—Dietic Diseases.												
Want of Breast Milk, Starvation	...	...	...	...	...	...	...	...	...	...	...	...
Scurvy	...	...	...	...	...	...	...	...	...	...	...	...
Chronic Alcoholism	...	...	...	...	1	2	1	...	...	...	...	4
Delirium Tremens	...	...	...	...	...	...	...	...	...	...	...	...
IV.—Constitutional Diseases.												
Rheumatic Fever, Rheumatism of the Heart	...	...	...	...	...	1	...	...	...	...	...	1
Rheumatism	...	...	...	...	...	...	...	1	...	...	...	1
Gout	...	...	...	...	...	...	1	...	...	...	...	1
Rickets	...	...	...	...	...	...	...	...	...	...	...	...
Cancer, Malignant Disease	...	...	...	...	...	4	4	6	10	2	1	27
Tabes Mesenterica	4	4	...	...	...	...	...	...	...	...	...	8
Tubercular Meningitis, Hydrocephalus	1	2	6	...	...	...	...	...	...	...	...	9
Phthisis	1	1	1	11	14	15	8	7	5	...	...	63
Other forms of Tuberculosis, Scrofula	4	3	2	3	...	2	...	...	...	...	...	14
Purpura, Hæmorrhagic Diathesis	...	...	...	...	...	...	...	...	...	...	...	...
Anæmia, Chlorosis, Leucocythæmia	...	...	...	...	...	...	...	2	1	...	...	3
Glycosuria, Diabetes Mellitus	...	...	...	1	1	...	...	1	...	...	...	3
Other Constitutional Diseases	...	...	...	...	...	...	...	...	...	...	...	..
V.—Developmental Diseases.												
Premature Birth	30	...	...	...	...	...	...	...	...	...	...	30
Atelectasis	1	...	...	...	...	...	...	...	...	...	..	1
Congenital Malformations	2	1	...	...	...	...	...	...	...	...	...	3
Old Age	...	...	...	...	...	...	...	...	18	40	15	73
VI.—Local Diseases.												
1.—DISEASES OF NERVOUS SYSTEM.												
Inflammation of Brain or Membranes	...	...	1	...	...	1	3	1	2	...	...	8
Apoplexy, Softening of Brain, Hemiplegia, Brain Paralysis	...	...	...	...	2	2	9	15	15	7	3	53
Insanity, General Paralysis of the Insane	...	...	...	...	1	1	1	...	1	1	...	5
Epilepsy	...	...	...	1	1	1	1	2	...	...	...	6
Convulsions	9	2	...	...	...	...	...	...	...	...	...	11
Laryngismus Stridulus (Spasm of Glottis)	...	...	...	...	...	...	...	...	...	...	...	...
Disease of Spinal Cord, Paraplegia, Paralysis Agitans	...	...	...	...	...	...	...	1	...	...	...	1
Other Diseases of Nervous System	...	...	...	...	...	...	...	...	1	...	...	1
2.—DISEASES OF ORGANS OF SPECIAL SENSE (*e.g.*, of Ear, Eye, Nose)	...	...	...	...	...	1	...	...	...	...	...	1
3.—DISEASES OF CIRCULATORY SYSTEM.												
Pericarditis	...	...	...	...	...	...	...	...	...	...	...	...
Acute Endocarditis	...	...	...	...	...	...	...	...	...	1	...	1
Valvular Diseases of Heart	...	...	1	1	2	1	1	4	1	2	...	13
Other Diseases of Heart	...	...	2	...	2	2	10	15	9	3	...	43
Aneurism	...	...	...	...	...	...	...	...	...	...	...	...
Embolism, Thrombosis	...	...	...	...	...	1	...	...	...	...	...	1
Other Diseases of Blood Vessels	...	...	...	...	...	...	..	...	...	1	1	2
4.—DISEASES OF RESPIRATORY SYSTEM.												
Laryngitis	...	2	...	...	...	..	...	...	...	...	...	2
Croup	...	...	...	...	...	...	...	...	...	...	...	...
Emphysema, Asthma	...	...	...	...	...	...	...	...	1	...	...	1
Bronchitis	19	9	1	...	1	1	3	10	13	8	3	68
Pneumonia	2	6	2	...	3	2	3	8	8	3	...	37
Pleurisy	...	...	...	...	...	..	...	..	...	...	...	...
Other Diseases of Respiratory System	...	...	...	...	...	...	...	...	...	...	...	...
5.—DISEASES OF DIGESTIVE SYSTEM.												
Dentition	3	2	...	...	...	...	...	...	...	...	...	5
Sore Throat, Quinsy	...	...	...	...	...	...	...	...	...	...	...	...
Diseases of Stomach	...	2	...	...	...	...	...	3	...	...	...	5
Enteritis	14	5	1	...	...	2	...	...	2	...	...	24
Obstructive Diseases of Intestine	...	...	...	...	...	1	...	...	...	2	...	3
Peritonitis	...	...	2	...	1	2	...	1	...	...	...	6
Ascites	...	...	...	...	...	...	...	...	...	...	...	...
Cirrhosis of Liver	...	...	...	...	2	2	3	...	3	...	...	10
Jaundice and other Diseases of Liver	...	...	...	...	...	...	1	2	...	...	...	3
Other Diseases of Digestive System	...	...	...	...	...	...	...	...	...	...	...	...
6.—DISEASES OF LYMPHATIC SYSTEM (*e.g.*, of Lymphatics and of Spleen)	...	...	...	...	...	...	...	...	...	...	...	...
7.—DISEASES OF GLAND-LIKE ORGANS OF UNCERTAIN USE (*e.g.*, Bronchocele, Addison's Disease)	...	...	...	...	...	...	...	...	...	...	...	...
8.—DISEASES OF URINARY SYSTEM.												
Nephritis	...	...	...	1	1	2	2	4	3	...	...	13
Bright's Disease, Albuminuria	...	...	...	...	...	1	2	4	1	...	...	8
Disease of Bladder or of Prostate	...	...	...	...	1	...	...	...	...	1	...	2
Other Diseases of the Urinary System	...	...	...	...	1	...	...	...	...	...	...	1
9.—DISEASES OF REPRODUCTIVE SYSTEM.												
A. *Of Organs of Generation.*												
Male Organs	...	...	...	...	...	1	...	...	...	...	...	1
Female Organs	...	...	...	...	1	1	1	...	...	...	...	3
B. *Of Parturition.*												
Abortion, Miscarriage	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal Convulsions	...	...	...	...	...	...	...	...	...	...	...	...
Placenta prævia, Flooding	...	...	...	...	...	...	...	...	...	...	...	...
Other Accidents of Child Birth	...	...	...	...	1	...	...	...	...	...	...	1
10.—DISEASES OF BONES AND JOINTS.												
Caries, Necrosis	...	...	...	1	...	1	1	...	...	...	...	3
Arthritis, Ostitis, Periostitis	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of Bones and Joints	...	...	...	...	...	...	...	...	...	...	...	...
11.—DISEASES OF INTEGUMENTARY SYSTEM.												
Carbuncle, Phlegmon	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of Integumentary System	...	...	...	...	...	...	...	...	...	...	...	...
VII.—Deaths from Violence.												
1.—ACCIDENT OR NEGLIGENCE.												
Fractures and Contusions	...	...	1	1	3	...	1	...	1	1	1	9
Gunshot Wounds	...	...	...	...	...	...	...	...	...	...	...	...
Cut, Stab	...	...	...	...	...	...	...	...	...	...	...	...
Burn, Scald	...	4	...	...	...	...	1	...	1	...	...	6
Poison	...	...	...	...	...	...	...	1	...	...	...	1
Drowning	...	1	1	...	...	...	...	...	...	...	...	2
Suffocation	4	...	...	...	...	...	...	...	...	...	...	4
Otherwise	...	...	...	...	...	...	...	...	...	...	...	...
2.—HOMICIDE.												
Manslaughter	...	...	...	...	...	...	...	...	...	...	...	...
Murder	...	...	...	...	...	...	...	...	...	...	...	...
3.—SUICIDE.												
Gunshot Wounds	...	...	...	...	...	...	...	...	...	...	...	...
Cut, Stab	...	...	...	...	...	...	...	...	2	...	...	...
Poison	...	...	...	...	1	...	...	...	...	...	...	1
Drowning	...	...	1	2	...	...	...	...	...	...	...	3
Hanging	...	...	...	...	...	...	...	...	...	...	...	...
Otherwise	...	...	...	...	...	...	...	...	...	...	...	...
4.—EXECUTION.												
Hanging	...	...	...	...	...	...	...	...	...	...	...	...
VIII.—Deaths from Ill-defined and not Specified Causes.												
Dropsy	...	...	...	...	...	...	...	...	...	...	...	...
Debility, Atrophy, Inanition	45	1	...	...	...	...	...	...	...	...	...	46
Mortification	...	...	...	...	...	...	...	...	1	...	...	1
Tumour	...	...	...	...	...	...	...	...	...	...	...	...
Abscess	...	...	...	...	...	...	...	...	...	...	...	...
Hæmorrhage	...	...	...	...	...	...	...	...	...	...	...	...
Sudden Death (cause not ascertained)	...	...	...	...	...	1	...	...	...	1	...	2
Causes not Specified or Ill-defined	1	...	2	...	...	...	1	...	1	...	...	5

SUMMARY OF TABLE III.

	No. of Deaths
I.—Specific Febrile, or Zymotic Diseases.	
1. Miasmatic Diseases	79
2. Diarrhœal ,,	18
3. Malarial ,,	...
4. Zoogenous ,,	1
5. Venereal ,,	4
6. Septic ,,	7
II.—Parasitic Diseases	...
III.—Dietic Diseases	4
IV.—Constitutional Diseases	130
V.—Developmental Diseases	107
VI.—Local Diseases.	
1. Diseases of Nervous System	85
2. Diseases of Organs of Special Sense	1
3. Diseases of Circulatory System	60
4. Diseases of Respiratory System	108
5. Diseases of Digestive System	56
Carried forward	660
Brought forward	660
VI.—Local Diseases—continued.	
6. Diseases of Lymphatic System	...
7. Diseases of Gland-like Organs of Uncertain Use	...
8. Diseases of Urinary System	24
9. Diseases of Reproductive System—	
(*a*). Diseases of Organs of Generation	4
(*b*). Diseases of Parturition	1
10. Diseases of Bones and Joints	3
11. Diseases of Integumentary System	...
VII.—Violence.	
1. Accident or Negligence	22
2. Homicide	...
3. Suicide	4
4. Execution	...
VIII.—Ill-defined and not specified causes	54
TOTAL	772

TABLE II.

AGE AND SEX DISTRIBUTION OF DEATHS FOR EACH MONTH OF THE YEAR 1898.

		January	February	March	April	May	June	July	August	September	October	November	December	Total.	
Under 1 year	Male ...	4	12	10	10	0	4	6	12	11	7	6	12	94	170
	Female...	8	9	7	4	2	4	7	7	17	3	2	6	76	
1 to 5 years	Male ...	6	7	5	2	2	3	1	2	2	3	0	5	37	78
	Female...	2	6	8	5	2	3	4	2	2	1	3	3	41	
5 to 65 years	Male ...	9	19	24	15	10	18	18	10	16	15	11	16	183	312
	Female...	6	13	17	12	10	13	9	9	9	8	12	11	129	
Over 65 years	Male ...	8	10	13	10	4	7	7	3	3	5	10	4	84	199
	Female...	11	14	15	12	12	5	6	7	11	6	6	10	115	
Totals ...		54	90	99	70	42	57	58	52	71	48	50	67	758	

N.B.—Tables II., III., and IV. do not include the 14 deaths that took place at Powick Asylum.

TABLE III.

DEATHS AND BIRTHS OCCURRING IN PARISHES.

Parish.	Population estimated	Total Deaths.	Death-rate.	Births.	Deaths under 1 year.	Infantile Death-rate.
All Saints ...	1809	37	20·4	49	11	224
St. Andrew...	1175	29	24·6	32	6	187
St. Swithin ...	558	11	18·9	6	2	333
Blockhouse...	2202	39	17·7	85	10	117
St. Helen ...	945	17	17·9	26	4	153
St. Michael ...	444	8	18·0	5	1	200
St. Alban ...	153	3	19·6	4	2	500
College Precincts...	129	1	7·7	...	...	0·0
St. Nicholas..	1800	18	10·0	32	2	62
Whistones ...	2862	53	18·5	77	5	64
St. John	4700	80	17·0	113	13	115
St. Clement...	2107	46	21·8	69	13	188
South Hallow	486	8	16·4	11	...	0·0
St. Martin ...	4665	86	18·4	173	17	98
St. Peter	8200	124	15·1	257	43	167
South Claines	12,000	198	16·5	325	41	126
Worcester ...	**44,760**	**758**	**16·9**	**1264**	**170**	**134**

TABLE IV.

ANALYSIS OF DEATHS OCCURRING IN PARISHES.

Parish.	Males.	Females.	Total.	Age.			
				Under 1 year.	1—5 years.	5—60 years.	Over 60 years.
All Saints.........	21	16	37	11	3	12	11
St. Andrew	15	14	29	6	3	11	9
St. Swithin	10	1	11	2	2	4	3
Blockhouse	20	19	39	10	6	14	9
St. Helen	10	7	17	4	1	3	9
St. Michael	5	3	8	1	3	1	3
St. Alban	...	3	3	2	...	...	1
College Precincts	...	1	1	...	...	...	1
St. Nicholas	11	7	18	2	...	10	6
Whistones.........	23	30	53	5	4	17	27
St. John...........	36	44	80	13	8	35	24
St. Clement	28	18	46	13	6	11	16
South Hallow ...	3	5	8	...	2	5	1
St. Martin.........	49	37	86	17	9	42	18
St. Peter	63	61	124	43	10	39	32
South Claines ...	100	98	198	41	23	62	72

TABLE V.

BIRTH-RATE AND DEATH-RATE OF 1898, COMPARED WITH THE RATES OF THE PRECEDING TEN YEARS.

Year.	Population.	Natural Increase	Registered Births.	Birth-rate.	Total Deaths.	Death-rate.	Deaths under 1 year.	Infantile Death-rate.	Deaths under 5 years.	Deaths from the seven principal Zymotics	Zymotic Death-rate.
1888	42,220	515	1321	31·3	806	18·9	224	169·5	317	93	2·3
1889	42,462	565	1332	31·5	767	18·1	218	163·	264	46	1·3
1890	42,715	378	1256	29·4	878	20·6	225	179·	281	59	1·4
1891	42,950	341	1273	29·6	932	21·6	269	208·	397	124	2·8
1892	43,195	293	1267	29·3	974	22·5	209	164·	277	57	1·3
1893	43,480	408	1244	28·6	836	19·2	207	166·	285	92	2·1
1894	43,735	577	1295	29·6	718	16·4	183	141·3	266	57	1·3
1895	43,994	425	1365	31·02	940	21·3	259	189·	352	96	2·18
1896	44,250	485	1312	29·6	827	18·6	215	163·	340	118	2·6
1897	44,505	394	1270	28·5	883	19·8	208	160·	309	112	2·5
	Average of preceding 10 years...	438	1293	29·8	856	19·7	221	170	308	85	1·9
1898	**44,760**	**506**	**1264**	**28·2**	**772**	**17·2**	**170**	**134**	**248**	**77**	**1·7**

TABLE OF DEATHS DURING THE YEAR 1898 REGISTERED IN THE CITY OF WORCESTER, CLASSIFIED ACCORDING TO DISEASES, AGES, AND LOCALITIES.

These Tables are made at the request of the Local Government Board, on forms supplied by them.

Names of Localities.	Mortality from all causes, at subjoined Ages.								Mortality from subjoined causes, distinguishing Deaths of Children under Five Years of Age.																					
	At all Ages.	Under 1 year.	1 and under 5	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.		Smallpox.	Scarlatina.	Diphtheria.	Membranous Croup.	Fevers. Typhus.	Fevers. Enteric or Typhoid.	Fevers. Continued	Fevers. Relapsing.	Fevers. Puerperal.	Cholera.	Erysipelas.	Measles.	Whooping Cough.	Diarrhœa & Dysentery.	Rheumatic Fever.	Phthisis.	Bronchitis, Pneumonia, and Pleurisy.	Heart Disease.	Influenza.	Injuries.	All Other Diseases.	Total.
City of Worcester ……	661	166	64	34	21	209	167	Under 5		1	10									17		17		2	35		1	7	140	230
								5 upwds.		3	9			1			1		2	1		1	1	51	61	50	19	5	226	431
Workhouse ……………	52	3	1			19	29	Under 5																				1	3	4
								5 upwds.																4	2	5		2	35	48
General Infirmary ……	58	2	5	7	6	32	6	Under 5			2									1					1			1	2	7
								5 upwds.																4	5	1		8	33	51
Barbourne Hospital……	3		3					Under 5			3																			3
								5 upwds.																						
New Isolation Hospital	11		6	5				Under 5		4	2																			6
								5 upwds.		2	3																			5
Totals……	785	171	79	46	27	260	202	Under 5		5	17									18		17		2	36		1	9	145	350
								5 upwds.		5	12			1			1		2	1		1	1	59	68	56	19	15	294	535
The subjoined numbers have also to be taken into account in judging of the above records of mortality.																														
Deaths occurring outside the district among persons belonging thereto…	14					11	3	Under 5																						
								5 upwds.																3	2		1		8	14
Deaths occurring within the district among persons not belonging thereto …	27	1	1	4	4	14	3	Under 5																					2	2
								5 upwds.																1	1	1		2	20	25

TABLE OF POPULATION, BIRTHS, AND OF NEW CASES OF INFECTIOUS SICKNESS CLASSIFIED ACCORDING TO DISEASES, AGES, AND LOCALITIES.

This Table is made at the request of the Local Government Board, on forms supplied by them.

Names of Localities.	Population at all Ages.		Registered Births.	Aged under 5 or over 5.	New Cases of Sickness in each Locality, coming to the knowledge of the Medical Officer of Health.											Number of such cases removed from their homes in the several localities for treatment in Isolation Hospital.				
	Last Census.	Estimated to middle of 1898.			Smallpox.	Scarlatina.	Diphtheria.	Membranous Croup.	Fevers. Typhus.	Fevers. Enteric or Typhoid.	Fevers. Continued.	Fevers. Relapsing.	Fevers. Puerperal.	Cholera.	Erysipelas.	Smallpox.	Scarlatina.	Diphtheria.	Membranous Croup.	Enteric or Typhoid Fever.
City of Worcester…………	42,908	44,760	1,264	Under 5		83	47			2					2		52	16		
				5 upwds.		234	119			12	2		4		48		162	52		
Workhouse ………………				Under 5																
				5 upwds.																
General Infirmary…………				Under 5																
				5 upwds.			4			2					1					
Albert Orphan Asylum……				Under 5																
				5 upwds.			15													
Totals…………				Under 5		83	47			2					2		52	16		
				5 upwds.		234	138			14	2		4		49		162	52		

TABLE VI.

DEATHS FROM THE SEVEN PRINCIPAL ZYMOTIC DISEASES IN 1898, COMPARED WITH THE PRECEDING TEN YEARS.

Year.	Smallpox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Fever.			Diarrhœa.	TOTAL.
						Typhus.	Typhoid.	Con-tinued.		
1888......	...	30	7	3	11	...	5	...	37	93
1889......	...	...	2	3	1	...	7	...	33	46
1890......	...	2	4	2	5	...	10	...	36	59
1891......	...	32	...	2	60	1	8	...	21	124
1892......	...	1	2	11	5	...	14	1	23	57
1893......	1	19	4	9	6	...	9	...	44	92
1894......	2	27	1	7	...	...	3	...	17	57
1895......	...	...	1	7	55	...	3	...	30	96
1896......	...	28	3	49	7	...	4	...	27	118
1897......	...	32	2	33	24	...	3	...	18	112
Average of the preceding ten years	·3	17·1	2·6	12·6	17·4	·1	6·6	·1	28·5	85·4
1898........	...	**19**	**10**	**29**	...	...	**1**	...	**18**	**77**

Report of the Sanitary Inspector for the Year 1898.

TO THE URBAN SANITARY AUTHORITY OF THE CITY OF WORCESTER.

Gentlemen,

I have the honour to present my Report of the Sanitary Work carried on during the year. As year after year the same class of nuisances are dealt with, it is somewhat difficult to find anything fresh to introduce to your Authority. It will be observed in the following paragraphs that owing to the notification of infectious diseases the number of houses disinfected has been very large, and also owing to the same cause that a large number of notices have been sent to the different schools notifying the managers of the necessity of keeping children away from school who have been exposed to infection or who are infected.

My relations with owners and agents of property have, as previously, been of the most amicable character, which of course makes our work, sometimes not of the most pleasant character, much easier to perform. Our regular system of inspection of districts enables us to keep a direct supervision, and prevent nuisances remaining undiscovered.

The fear of complaining or the indifference of tenants as to informing us of any nuisances necessitates that our quarterly inspections should be carried out, so that unless these inspections are made nuisances would accumulate and become a public danger. It is somewhat strange, that, with the greater education of the people in sanitary matters there should be so many who, rather than give us information, will quietly put up with dangerous nuisances close to their doors.

The notices sent from this department are so framed that agents of property and owners now send them direct to tradesmen to carry out the work which is distinctly specified in them. I may say that most of the agents acknowledge the receipt of notices sent to them with an intimation that such notices have been sent to such and such tradesmen with instructions to carry out the work set down therein.

The following account of work carried out during the year will I hope show that your officers have not been idle or neglectful of the health of the City.

Filthy or Dilapidated Dwellings.—Three hundred and thirty-two have been dealt with during the year, being somewhat less than last year, and these we hope will continue to decrease as we gradually get the tenants to keep them cleaner when once put in thorough repair.

Overcrowded Dwellings.—Forty-two cases of overcrowding have been discovered and dealt with. The knowledge of such cases is very difficult to get, and we are indebted to many sources for such. As I have previously said in other reports, this is a nuisance very difficult to deal with satisfactorily. Families which at one time were not too many for the house accommodation, increase, and without any increase in wages, which would enable the tenant to take a larger house, remain on and on till such times as we are called upon to interfere.

Foul or Defective Drains.—Four hundred and twenty-nine cases under this head have been dealt with, and this number I hope to decrease yearly as we get new drains put in and water supply attached to every closet in the City. Old D traps have been taken out wherever we found them badly set and bell traps we never leave when discovered but compel stoneware gullies to be put in their place. These requirements alone tend to keep the drains in better order and less liable to get choked or stopped. No efforts of ours will entirely prevent this, as tenants do not seem to understand what a drain can take away, judging by what we find in them when taken up for repairs, such as tin cans, brushes, floor cloths, and other things.

Drains inside Dwellings.—These are nearly things of the past, and it is only when it is impossible to have them removed owing to the system of drainage that they are allowed to remain.

Privy Cess-pits.—There are few remaining in the City now and these are so situated as to be beyond the reach of sewers or far enough away from dwelling as to be no nuisance.

Ash-pits.—In most of the new houses no ashpits are built as the carts take away the refuse every week and occupiers find it more economical to keep ash-bins than to pay for emptying an ash-pit.

Dilapidated Privies or W.C's.—Two hundred and thirteen of these have been repaired or rebuilt and water supply provided. We are gradually getting the water laid on in these conveniences where previously there was none.

Accumulations of Manure, &c.—Very few complaints are received of nuisances of this character, and when discovered are soon removed.

Miscellaneous Nuisances.—These mainly consist of animals kept in dwellings or cellars, swine kept within 50 feet of a dwelling, defective spouting, and such like. *Sixty-two cases* have been dealt with under this head.

Disinfection of Houses.—Four hundred and eighty-one houses have been disinfected by your officers owing to infectious diseases having occurred in them. In all cases where necessary the walls of infected rooms are stripped and re-papered, the ceilings whitewashed, and paint removed or scoured.

Food and Drugs Acts.—Seventy-one samples of food, &c., have been procured and analysed, with the results as below :—

Article.	*Genuine.*	*Adulterated.*	*Result.*
Milk	33	4	£2 and costs in each case.
Butter	13	—	
Sugar	10	—	
W. Pepper	4	—	
Cheese	1	—	
Olive Oil	1	—	
Lard	2	—	
Vinegar	2	—	
Brandy	—	1	£3 and costs.

Fourteen samples of well water were also analysed, two were polluted and one suspicious.

Eleven samples of tap water were also taken and found good.

Dairies, Cowsheds, and Milkshops.—Visits are constantly made, and as a rule the premises and vessels are found clean.

Slaughter Houses.—These are inspected every week, and in some cases more often. Notices are sent quarterly ordering the walls to be whitewashed. In two cases new concrete floors have been laid down by my orders. These places are kept very clean, especially as the situation of some does not lend itself to that end.

Common Lodging Houses.—These are also inspected every week, and as a rule are kept clean. No case of infectious disease has occurred in these houses during the year, although they are in the poorest parts of the City.

Canal Boats.—My Annual Report having been presented to the Council I need not say anything further in this report.

Shop Hours Act, 1892.—I make periodical inspections under this Act. In a few cases I have found the Abstracts of the Act missing owing to want of thought or from damage. They have been at once renewed when I have mentioned it. As a rule this Act is well carried out in Worcester.

In conclusion, I would express my thanks to the Medical

Officer of Health (Dr. Read), for his kindness and help on every occasion and to say how much I appreciate it. To the Assistant Inspector (Mr. Sheppard) my thanks are also due for the able and willing manner in which he carries out all his duties, and his knowledge of building is of very great assistance.

I am, Gentlemen,
Your obedient Servant,
W. PACY,
Inspector Assoc. San. Inst.

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